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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/720,308

11/25/2003

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H-1121

4719

7590

06/05/2006

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EXAMINER

SAVLA, ARPAN P

ART UNIT

PAPER NUMBER

2185

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/720,308	Applicant(s) KANEDA ET AL.	
	Examiner Arpan P. Savla	Art Unit 2185	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 November 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/9/05, 1/19/05</u> | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

The instant application having Application No. 10/720,308 has a total of 13 claims pending in the application, there are 8 independent claims and 5 dependent claims, all of which are ready for examination by the Examiner.

#### **Response to Preliminary Amendment**

1. This instant office action is in response to Applicant's communication of a Preliminary Amendment filed July 12, 2005. Applicant's remarks and amendment to the specification and/or claims were considered with the results that follow.

Claims 1-13 have been presented for examination in this instant application. In response to the Preliminary Amendment, claims 1, 7, 8, 10, and 11 have been amended.

#### **INFORMATION CONCERNING OATH/DECLARATION**

##### **Oath/Declaration**

2. Applicant's oath/declaration has been reviewed by the Examiner and is found to conform to the requirements prescribed in 37 CFR 1.63.

#### **STATUS OF CLAIM FOR PRIORITY IN THE APPLICATION**

3. As required by MPEP § 201.14(c), acknowledgment is made of Applicant's claim for priority based on an application filed in the Japanese Patent Office on November 28, 2002.

**INFORMATION CONCERNING DRAWINGS**

**Drawings**

4. Applicant's drawings submitted November 23, 2003 are acceptable for examination.

**ACKNOWLEDGMENT OF REFERENCES CITED BY APPLICANT**

**Information Disclosure Statement**

5. As required by MPEP § 609(c), Applicant's submission of the Information Disclosure Statements dated December 9, 2003 and January 19, 2005 are acknowledged by the Examiner and the cited references have been considered in the examination of the claims now pending. As required by MPEP § 609 c(2), a copy of the PTOL-1449 initialed and dated by the Examiner is attached to the instant office action.

**OBJECTIONS**

**Specification**

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

**REJECTIONS NOT BASED ON PRIOR ART**

**Claim Rejections - 35 USC § 101**

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. **Claims 10-11 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.** These claims disclose merely a program that is not embodied on a computer-readable medium needed to realize the computer program's functionality. Therefore, the program simply represents functional descriptive material and is thus non-statutory subject matter.

**Claim Rejections - 35 USC § 112**

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. **Claims 4-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

11. **Claims 4 and 5** recite the limitation "said management computer" in lines 2 and 2-3 respectively. There is insufficient antecedent basis for this limitation in the claims. Applicant may consider amending the claims to read "a management computer."

12. **Claims 4 and 5** also recite the limitation "the file system type information" in line 3 of both claims. There is insufficient antecedent basis for this limitation in the claims. Applicant may consider removing the word "the" and amending the claim to read "file system type information."

**REJECTIONS BASED ON PRIOR ART**

**Claim Rejections - 35 USC § 102**

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14. **Claims 1-3, 7-9, and 12-13 are rejected under U.S.C. 102(e) as being anticipated by Constable et al. (U.S. Patent 6,792,519).**

15. **As per claim 1**, Constable discloses a data storage system having a computer and a data storage apparatus, which has a plurality of storage volumes for storing data to be accessed by said computer, wherein:

said data storage apparatus comprises:

a management unit for generating a response to said computer for recognizing a virtual drive unit capable of treating said storage volume that is non-removable as a removable storage medium (col. 7, line 62 – col. 5, line 2; col. 7, lines 35-41; Fig. 2, elements 2, 6, and 12). *It should be noted that "VDS Controller" is analogous to "management unit", "CPU" is analogous to "computer", "virtual disk drive" is analogous to "virtual drive unit", and "Disk Drive" is analogous to "non-removable storage medium."* *It should also be noted that once the VDS Controller recognizes all the virtual disk*

*drives that are active it presents the corresponding active virtual disk drive (i.e. sends a response) to the CPU.*

and a storing unit for storing volume management information indicating the correspondent relationship between said virtual drive unit and said storage volume (col. 8, lines 2-19; Table 1; Fig. 8), *It should be noted that the "map" stored on the "NVRAM" is analogous to the "storing unit" and "Disk Drive" is also analogous to "storage volume."*

and said computer comprises:

an interface for receiving said response (Fig. 2, element 4);

and a management unit for recognizing said virtual drive unit based on said response (col. 8, lines 35-41; Fig. 2, element 2), *It should be noted that even the CPU is analogous to the "computer" as a whole, the CPU still provides the function of the management unit by recognizing the corresponding active virtual disk drive.*

and the management unit of said data storage apparatus specifies said storage volume to be accessed based on an access request from said computer to said virtual drive unit, and said volume management information (col. 5, lines 9-16).

16. **As per claim 2**, Constable discloses the management unit of said computer further recognizes said storage volume corresponding to said virtual drive unit as a real non-removable storage volume (col. 5, lines 43-47). *It should be noted that during this initialization period the CPU has access to the virtual disk configuration and therefore can recognize that all the virtual disks are truly part of a larger physical disk drive.*

17. **As per claim 3**, Constable discloses the management unit of said data storage apparatus receives a switching request from said computer for switching the

correspondent relationship between said virtual drive unit and said storage volume, and, based on said switching request, rewrites said volume management information (col. 5, lines 24-27; col. 10, line 65 – col. 11, line 19; Fig. 6A, elements 48, 50, 52, and 54). *It should be noted that the user input is provided to the VSD controller via the CPU.*

18. **As per claim 7**, Constable discloses a data storage apparatus having a plurality of storage volumes for storing data to be accessed by a computer, comprising:

a management unit for generating a response to said computer for recognizing a virtual drive unit capable of treating said storage volume that is non-removable as a removable storage medium (col. 7, line 62 – col. 5, line 2; col. 7, lines 35-41; Fig. 2, elements 2, 6, and 12); *Please see the citation note for the similar limitation of claim 1 above.*

and a storing unit for storing volume management information indicating the correspondent relationship between said virtual drive unit and said storage volume (col. 8, lines 2-19; Table 1; Fig. 8), *Please see the citation note for the similar limitation of claim 1 above, wherein:*

said management unit specifies said storage volume to be accessed based on an access request from said computer to said virtual drive unit, and said volume management information (col. 5, lines 9-16).

19. **As per claim 8**, Constable discloses a computer for accessing data stored in a plurality of storage volumes in a data storage apparatus, comprising:

an interface for receiving a response from said data storage apparatus for recognizing a virtual drive unit capable of treating said storage volume that is non-removable as a removable storage medium (Fig. 2, element 4);

and a management unit for recognizing, on the basis of said response, a virtual drive unit to which said storage volume that is non-removable is connected as a removable storage medium (col. 8, lines 35-41; Fig. 2, element 2). *It should be noted that "correspond" is analogous to "connect." Also, please see the citation note for the similar limitation of claim 1 above.*

20. **As per claim 9**, Constable discloses a connecting apparatus for managing the correspondent relationship between a computer and a data storage apparatus having a plurality of storage volumes for storing data to be accessed by said computer, comprising:

a management unit for generating a response to said computer for recognizing a virtual drive unit capable of treating said storage volume that is non-removable as a removable storage medium (col. 7, line 62 – col. 5, line 2; col. 7, lines 35-41; Fig. 2, elements 2, 6, and 12); *It should be noted the "VSD controller" can also serve as part of a "connecting apparatus for managing the correspondent relationship between the CPU and Disk Drives. Also, please see the citation note for the similar limitation of claim 1 above.*

and a storing unit for storing volume management information indicating the correspondent relationships between said virtual drive unit and said storage volumes

(col. 8, lines 2-19; Table 1; Fig. 8), *Please see the citation note for the similar limitation of claim 1 above*, wherein:

said management unit specifies said storage volume to be accessed based on an access request from said computer to said virtual drive unit, and said volume management information (col. 5, lines 9-16).

21. **As per claim 12**, Constable discloses a method for managing access to data stored in a plurality of storage volumes in a data storage apparatus, comprising the steps of:

receiving a response from said data storage apparatus for recognizing a virtual drive unit capable of treating said storage volume that is non-removable as a removable storage medium (col. 8, lines 35-37; Fig. 2, element 4); *It should also be noted that once the VDS Controller recognizes all the virtual disk drives that are active it presents the corresponding active virtual disk drive (i.e. sends a response) to the CPU which in turn the CPU receives via Data Bus 4.*

and recognizing, on the basis of said response, a virtual drive unit to which said storage volume that is non-removable is connected as a removable storage medium (col. 8, lines 37-41).

22. **As per claim 13**, Constable discloses a method for managing access to data stored in a plurality of storage volumes in a data storage apparatus, comprising the steps of:

generating a response to said computer for recognizing a virtual drive unit capable of treating said storage volume that is non-removable as a removable storage

medium (col. 8, lines 35-41); *It should also be noted that once the VDS Controller recognizes all the virtual disk drives that are active and generates the map it presents (i.e. sends a response) the corresponding active virtual disk drive to the CPU.*

storing volume management information indicating the correspondent relationship between said virtual drive unit and said storage volume (col. 8, lines 2-19; Table 1; Fig. 8); *Please see the citation note for the similar limitation of claim 1 above.*

and specifying said storage volume to be accessed based on an access request from said computer to said virtual drive unit, and said volume management information (col. 5, lines 9-16).

### **Claim Rejections - 35 USC § 103**

23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

24. **Claims 4-5 are rejected under 35 U.S.C. 103(a) as being obvious over Constable in view of Ruff et al. (U.S. Patent 5,706,472).**

25. **As per claim 4**, Constable discloses all the limitations of claim 4 except the management unit of said computer sends to said management computer the file system type information of said virtual drive unit recognized on the basis of said response.

Ruff discloses the management unit of said computer sends to said management computer the file system type information of said virtual drive unit recognized on the

basis of said response (col. 9, lines 53-58; col. 9, line 65 – col. 10, line 13; col. 10, lines 21-24; Fig. 4, elements 104 and 112; Fig. 6, elements 114 and 120). *It should be noted that the "PartitionMagic program" is analogous to the "management computer."* *It should also be noted that the identifying step is implemented by a table look-up, a case, switch statement, etc. and therefore it is inherently required some sort of processor/controller perform this look-up or switch statement. It therefore follows that this processor/controller is analogous to the "management unit of the computer."*

Constable and Ruff are analogous art because they are from the same field of endeavor, that being disk drive partitioning using logical disks.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to implement Ruff's GUI identifying file system types within Constable's virtual data storage (VDS) system.

The motivation for doing so would have been to provide users with feedback regarding the current partition configuration and a command interface for molding that configuration (Ruff, col. 10, lines 2-5), thus making the process of manipulating the disk partitions easier and more user-friendly.

Therefore, it would have been obvious to combine Constable and Ruff for the benefit of obtaining the invention as specified in claim 4.

26. **As per claim 5**, Ruff discloses the management unit of said data storage apparatus sends to said management computer the file system type information of said virtual drive unit recognized on the basis of said response (col. 9, lines 53-58; col. 9, line 65 – col. 10, line 13; col. 10, lines 21-24; Fig. 4, elements 104 and 112; Fig. 6, elements

114 and 120). *It should be noted that the "PartitionMagic program" is analogous to the "management computer." It should also be noted that the identifying step is implemented by a table look-up, a case, switch statement, etc. and therefore it is inherently required some sort of processor/controller perform this look-up or switch statement. It therefore follows that this processor/controller is also analogous to the "management unit of the data storage apparatus."*

**27. Claim 6 is rejected under 35 U.S.C. 103(a) as being obvious over Constable in view of Gunderson (U.S. Patent 6,073,220).**

28. Constable discloses all the limitations of claim 6 except the storing unit of said data storage apparatus further stores, as said volume management information, replication information for replicating information stored in a first storage volume of said storage volumes, in a second storage volume,

and the management unit of said data storage apparatus replicates the information stored in the first storage volume of said storage volumes, in the second storage volume on the basis of said replication information, and when a request is issued from said computer for retrieving said first storage volume from a virtual drive unit, said management unit treats said second storage volume as a replicated storage volume at the time at which said first storage volume split from the virtual drive unit, by terminating replication of information stored in said first storage volume to said second storage volume.

Gunderson discloses the storing unit of said data storage apparatus further stores, as said volume management information, replication information for replicating

information stored in a first storage volume of said storage volumes, in a second storage volume (col. 9, lines 48-54; col. 10, lines 17-19; Fig. 4, Step 25), *It should be noted that "bad sector table" is analogous to "replication information", "primary drive" is analogous to "first storage volume", and "secondary drive" is analogous to "second storage volume."*

and the management unit of said data storage apparatus replicates the information stored in the first storage volume of said storage volumes, in the second storage volume on the basis of said replication information (col. 10, lines 21-28), and when a request is issued from said computer for retrieving said first storage volume from a virtual drive unit, said management unit treats said second storage volume as a replicated storage volume at the time at which said first storage volume split from the virtual drive unit, by terminating replication of information stored in said first storage volume to said second storage volume (col. 10, lines 38-52; col. 12, lines 18-22, 37-43, 45-50, and 52-60; Fig. 6, Steps 49 and 52). *It should be noted that it is inherently required the user issues a request to change the BIOS configuration of the Backup Disk via a computer. It should also be noted that at the time the primary boot drive fails (i.e. splits from the computer system) the backup drive not only stops being invisible and begins to be treated as a replicated storage drive, but also the periodic direct calls used to write data from the primary boot drive to the backup drive terminate.*

Constable and Gunderson are analogous art because they are from the same field of endeavor, that being data storage systems.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to implement Gunderson's transparent disk drive back-up system within Constable's VDS system.

The motivation for doing so would have been to save time by having the replacement process take only a matter of minutes in the event that the primary boot drive fails (Gunderson, col. 12, lines 16-18).

Therefore, it would have been obvious to combine Constable and Gunderson for the benefit of obtaining the invention as specified in claim 6.

**29. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being obvious over Constable in view of Andrew S. Tanenbaum, "Structured Computer Organization, 2<sup>nd</sup> Edition", hereafter "Tanenbaum."**

**30. As per claim 10**, Constable discloses receiving a response from said data storage apparatus for recognizing a virtual drive unit capable of treating said storage volume that is non-removable as a removable storage medium (col. 8, lines 35-37; Fig. 2, element 4); *Please see the citation note for the similar limitation of claim 12 above.*

and recognizing, on the basis of said response, a virtual drive unit to which said storage volume that is non-removable is connected as a removable storage medium (col. 8, lines 37-41).

Constable does not expressly disclose a program for managing access to data stored in a plurality of storage volumes in a data storage apparatus, said program causing a computer to execute:

function for receiving a response from said data storage apparatus for recognizing a virtual drive unit capable of treating said storage volume that is non-removable as a removable storage medium;

and function for recognizing, on the basis of said response, a virtual drive unit to which said storage volume that is non-removable is connected as a removable storage medium.

Tanenbaum discloses that hardware and software are logically equivalent (pg. 11, line 11).

Constable and Tanenbaum are analogous art because they are from the same field of endeavor, that being computer hardware.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to follow Tanenbaum's argument and implement Constable's VSD system using functions on a program (i.e. implement hardware using software).

The motivation for doing so would have been to optimize such factors as cost, speed, and reliability (Tanenbaum, pg. 11, lines 14-15).

Therefore, it would have been obvious to combine Constable and Tanenbaum for the benefit of obtaining the invention as specified in claim 10.

31. **As per claim 11**, Constable discloses generating a response to said computer for recognizing a virtual drive unit capable of treating said storage volume that is non-removable as a removable storage medium (col. 8, lines 35-41); *Please see the citation note for the similar limitation in claim 13 above.*

storing volume management information indicating the correspondent relationship between said virtual drive unit and said storage volume (col. 8, lines 2-19; Table 1; Fig. 8); *Please see the citation note for the similar limitation of claim 13 above.*

and specifying said storage volume to be accessed based on an access request from said computer to said virtual drive unit, and said volume management information (col. 5, lines 9-16).

Constable does not expressly disclose program for managing access to data stored in a plurality of storage volumes in a data storage apparatus, said program causing a computer to execute:

function for generating a response to said computer for recognizing a virtual drive unit capable of treating said storage volume that is non-removable as a removable storage medium;

function for storing volume management information indicating the correspondent relationship between said virtual drive unit and said storage volume;

and function for specifying said storage volume to be accessed based on an access request from said computer to said virtual drive unit, and said volume management information.

Tanenbaum discloses that hardware and software are logically equivalent (pg. 11, line 11).

Constable and Tanenbaum are analogous art because they are from the same field of endeavor, that being computer hardware.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to follow Tanenbaum's argument and implement Constable's VSD system using functions on a program (i.e. implement hardware using software).

The motivation for doing so would have been to optimize such factors as cost, speed, and reliability (Tanenbaum, pg. 11, lines 14-15).

Therefore, it would have been obvious to combine Constable and Tanenbaum for the benefit of obtaining the invention as specified in claim 11.

### **Conclusion**

### **STATUS OF CLAIMS IN THE APPLICATION**

The following is a summary of the treatment and status of all claims in the application as recommended by MPEP 707.70(i):

### **CLAIMS REJECTED IN THE APPLICATION**

Per the instant office action, **claims 1-13** have received a first action on the merits and are subject of a first action non-final.

### **RELEVANT ART CITED BY THE EXAMINER**

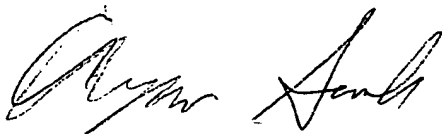
The following prior art made of record and not relied upon is cited to establish the level of skill in Applicant's art and those arts considered reasonably pertinent to Applicant's disclosure. See MPEP 707.05(e).

1. U.S. Patent 5,546,557 (Allen et al.) discloses a system for storing and managing plural logical volumes in each of several physical volumes including automatically creating logical volumes in peripheral data storage subsystem.
2. U.S. Patent 5,930,831 (March et al.) discloses partition manipulation architecture supporting multiple file systems.
3. U.S. Patent 6,243,790 (Yorimitsu) discloses a disk array apparatus in which logical disks can be easily re-arranged within the array, or added to the array.
4. U.S. Patent 6,356,915 (Chtchetkine et al.) discloses installable file system a having virtual file system drive, virtual device driver, and virtual disks.
5. U.S. Patent 6,665,786 (McMichael et al.) discloses a partition manager that enables the dynamic creation, reconfiguration, and deletion of logical volumes as non-removable storage devices are connected, reconfigured, or disconnected in a computer system by assigning partitions on a connected device to volume managers which create the logical volumes, and by removing the assignment when the device is disconnected or reconfigured.
6. U.S. Patent 6,816,941 (Carlson et al.) discloses a method and system for efficiently importing/exporting a removable storage volume having a number of data files from a first virtual storage system to a second virtual storage system.

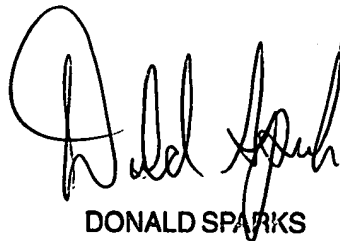
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arpan P. Savla whose telephone number is (571) 272-1077. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Arpan Savla  
Assistant Examiner  
Art Unit 2185  
May 25, 2006



DONALD SPARKS  
SUPERVISORY PATENT EXAMINER